REMARKS/ARGUMENTS

Claims 6 to 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Charquet et al. (U.S. 5,674,330). Claims 6 to 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sabol et al. (EP 0 085 552). Claims 6 to 10 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11, 12, 13 and 18 respectively of co-pending Application No. 10/541,774.

Claim 9 has been amended. Support found in original claim 6 and in the specification page 9, paragraph 7, lines 2 to 5, for example.

Claims 11 to 20 have been added.

Reconsideration of the application is respectfully requested.

35 U.S.C. 103(a) Rejections based on Charquet al.

Claims 6 to 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Charquet et al. (U.S. 5,674,330).

Charquet et al. discloses a process for the production of zirconium alloy sheet metal specifically intended for the manufacture of structural elements for boiling water reactors. The process includes "producing in a vacuum and ingot having a composition of the desired alloy; forging and hot rolling the ingot; quenching of the blank thus obtained after reheating in the beta range; hot rolling after heating; heat treatment in the alpha range; at least on cycle of cold rolling followed by a heat treating in the alpha range; and final cold rolling followed by subcritical annealing in the alpha range." (See Abstract).

Claim 6 recites, "a method for production of a semi-finished product made of zirconium alloy containing by weight at least 97% zirconium, intended for the production of flat products, comprising:

producing an ingot with a diameter between 400 mm and 800 mm and a length between 2 m and 3 m by casting the zirconium alloy;

forging the ingot of the semi-finished product in the form of a slab with a thickness of approximately 100 mm and intended to be hot rolled then cold rolled to obtain a flat product of a thickness between 0.2 mm and 4 mm, wherein the slab is produced from the ingot by a single forging

forging operation at a temperature at which the zirconium alloy is in a state comprising the crystalline α and β phases of the zirconium alloy."

Charquet et. al. does not teach or disclose "wherein the slab is produced from the ingot by a single forging operation at a temperature at which the zirconium alloy is in a state comprising the crystalline α and β phases of the zirconium alloy," as recited in claim 6. The wide range of the temperatures of Charquet et al., 700°C to 1100°C, largely covers purely α and purely β domains. There is no teaching or indication of a single forging at the temperature of the α and β phase. "If the claims are directed to a narrow range, and the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity' to constitute an anticipation of the claims. See, e.g., *Atofina v. Great Lakes Chem. Corp,* 441 F.3d 991, 999, 78 USPQD2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory." See MPEP 2131.03 Section II. Moreover the Office Action provides no proper reasoning on this regard as required by MPEP 2131.03. ("The examiner must, in this case, provide reasons for anticipation as well as a reasoned statement regarding obviousness."). The broad range of 700°C to 1100°C in Charquet et al. does not support the rejection. Furthermore, as admitted by the Office Action, Charquet et al. does not teach or disclose the size of the ingot.

Withdrawal of the rejections to claims 6 the dependent claims 7 to 10 under 35 U.S.C. § 103(a) as being unpatentable over Charquet et al. thus is respectfully requested.

With further respect to claim 7, claim 7 recites "wherein at the forging temperature the ingot contains a volume proportion of zirconium alloy in the α phase between 10% and 90%, a remainder of the zirconium alloy of the ingot being in the β phase."

Charquet et al. fails to teach or show the specific limitations of claim 7, nor do the broad temperature ranges of Charquet et al support this..

Withdrawal of the rejection of this claim for this reason as well is respectfully requested.

With further respect to claim 8, claim 8 recites "wherein the forging of the zirconium alloy in the α and β phase is performed at a temperature between 850°C and 950°C."

Charquet et al. fails to teach or show the specific temperature range of "850°C and 950°C," as recited in claim 8. Charquet et al. only teaches the broad temperature range of 700°C and 1100°C. It would not have been obvious to one of skill in the art to use such a specific temperature range, nor is there any motivation to do so.

Withdrawal of the rejection of this claim for this reason as well is respectfully requested.

35 U.S.C. 103(a) Rejections based on Sabol et al.

Claims 6 to 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sabol et al. (EP 0 085 552).

Sabol et al. discloses "alpha zirconium alloy intermediate and final products, and processes for their fabrication." (Page 1, lines 1 to 3).

Claim 6 recites "a method for production of a semi-finished product made of zirconium alloy containing by weight at least 97% zirconium, intended for the production of flat products, comprising:

producing an ingot with a diameter between 400 mm and 800 mm and a length between 2 m and 3 m by casting the zirconium alloy;

forging the ingot of the semi-finished product in the form of a slab with a thickness of approximately 100 mm and intended to be hot rolled then cold rolled to obtain a flat product of a thickness between 0.2 mm and 4 mm, wherein the slab is produced from the ingot by a single forging operation at a temperature at which the zirconium alloy is in a state comprising the crystalline α and β phases of the zirconium alloy."

Sabol et al. does not teach or disclose "wherein the slab is produced from the ingot by a single forging operation at a temperature at which the zirconium alloy is in a state comprising the crystalline α and β phases of the zirconium alloy," as recited in claim 6. Sabol et al. does not teach of a single forging step in the α and β phase. Furthermore, Sabol et al. fails to teach or show "forging the ingot of the semi-finished product in the form of a slab with a thickness of approximately 100 mm," as recited

approximately 100 mm," as recited in claim 6. Sabol et al. deals with long products and not with flat products and therefore does not imply forging of a slab 100 mm thick. Where Sabol does reference a rectangular cross section it cites to U.S. Patent No. 3, 645, 800 for examples of processing techniques for such final material. However, U.S. Patent No. 3, 645, 800 does not teach or disclose "forging operation at a temperature at which the zirconium alloy is in a state comprising the crystalline α and β phases of the zirconium alloy" or "wherein the slab is produced from the ingot by a single forging operation."

Withdrawal of the rejections to claims 6 and the dependent claims under 35 U.S.C. § 103(a) as being unpatentable over Sabol et al. thus is respectfully requested.

Double Patenting

Claims 6 to 10 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11, 12, 13 and 18 respectively of co-pending Application No. 10/541,774.

Claims 6 to 10 are patentably distinct from the claims of the co-pending application No. 10/541,774. The present invention is a single forging operation for a flat product and not a two step forging operation for long products as claimed in the co-pending application. The single forge operation would not have been obvious in view of the '774 claims nor has any such reasoning been asserted.

Withdrawal of the rejection to claim 5 and its dependent claims under 35 U.S.C. § 102(b) as being anticipated by Otto et al. thus is respectfully requested.

New Claims

Claims 11 to 20 have bee added. Support for claim 11 can be found in claim 6 and in the specification on page 10, paragraph 3, lines 1 to 2, for example. Support for claim 12 can be found in claim 6 and in the specification on page 9, paragraph 2, lines 1 to 3, for example. Support for claim 13 can be found in the specification on page 9, paragraph 3, lines 1 to 3, for example. Support for claim 14 and 17 can be found in claim 7, for example. Support for claim 15 and 19 can be found in claim 9, for example. Support for claim 16 and 20 can be found in claim 10, for example. Support for claim 18

claim 10, for example. Support for claim 18 can be found in claim 8, for example.

It is respectfully submitted that these claims are patentable.

CONCLUSION

The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully submitted,
DAVIDSON, DAVIDSON & KAPPEL, LLC

By:_____
William C. Gehris
Reg. No. 38,156

Davidson, Davidson & Kappel, LLC
485 Seventh Avenue
New York, New York 10018
(212) 736-1940